

a reduced perianth. Only one other point in this connection, on which the writer feels competent to express an opinion. What Prof. Gray once suggested, but with an important reservation, might be the equivalent of an involucre in *Lastarriæa* in the subtending whorl of cauline bracts, is utterly inadmissible from the fact that besides the so-called perianth, they encircle invariably the extending axis, thus showing that it is a true cauline and not a floral appendage. This is also clearly not the case in *Oxytheca luteola* (or any other *Eriogonous* species), where as in the former case the irregular whorl of spines enclose only the cluster of bracted perianths.

In conclusion, may we not express the earnest hope, in the true interest of systematic botany, that before botanical science is loaded down with useless synonyms, or made obscure by crude speculations and rash innovations, those who venture to leap will first take a long and careful look.

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## Botanizing in Texas. I.

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By "botanizing" I do not mean taking a railroad and stopping at such and such a station, taking a ramble or two in the neighboring hills, or sometimes jumping from the cars at a coal station, tempted by some tantalizing plant, and running back with only the top of said plant, at the call of the imperious whistle, and after that running may be a hundred miles before stopping again. That is not my way, as the railroads do not pass exactly where many nice things are found, and I don't care to be in a hurry.

So we started, my wife and I, and Robert Freeman, April 8, 1885, from our home in Dallas county. Freeman was a fine fellow, exactly fit for driving, hunting, fishing, and other duties invaluable on such a trip. Had we met some strayed Apaches or unruly Mexicans, he would have been equal to the emergency. Our covered wagon, drawn by a good team, was packed with provisions, drying papers, arms, etc. It would seem as if we were fixed to travel any length of time, and over any extent of country. I will not venture to describe our appearance, and must not forget that I am writing for botanists, anxious that I begin to botanize.

The evening sees us in the "Lower Cross-timbers," a vast belt of sandy post-oak land that extends a long distance north



and south, and separates two regions of extensive prairies. As the season was very backward few plants were in bloom, and I will only mention the *Astragalus distortus*. After that we reached some cretaceous hills bordering a vast prairie, and here for the first time a botanist traveling from the east will find *Actinella scaposa*, *Scutellaria Wrightii*, and *Quercus virens*, all three very common through the west. Along the streams he would notice *Vitis rupestris*.

After crossing some extensive prairies we come in sight of the valley of the Brazos. There are limestone bluffs intermixed with sandy patches of post-oaks, some fine prairies, and beautiful clear streams. There we collected *Psoralea esculenta*, *Townsendia sericea*, *Vesicaria recurvata* and *densiflora*, and *Berberis trifoliata*. The mountain cedar (*Juniperus occidentalis*, var. *conjungens*) also appears for the first time.

We crossed the Brazos near Comanche's peak, and reached the Paluey's valley the next day, through a sandy forest interspersed with rocky prairies. Along streams we collected *Ranunculus macranthus*. We find nothing new in this valley, nor in the regions south of it for about twenty miles, consisting of woods, prairies, and hillocks.

On the 17th we crossed the Bosque river, and found ourselves in an extensive prairie, where was discovered a rare plant, *Amsonia longiflora*. We also admired the numerous shades of *Castilleja purpurea*, whose flowers vary from dark red to white, and from orange to light straw color.

About Cowhouse creek and Lamosas river we were detained over a week by nearly continual showers. On the prairies we noticed *Gaura coccinea*, *Oenothera Greggii*, and *Melampodium cinereum*; along the streams, *Clematis coccinea* and *Nemophila phacelioides*; while the characteristic species of the limestone bluffs are *Astragalus Reverchoni*, *Psoralea hypogæa*, *Erodium Texanum*, *Vesicaria Engelmanni*, and a *Sisyrinchium* that I expect has no name yet. I also found a little patch of *Dodecatheon Meadia*. On some rocky hills were the following: *Morus parvifolia*, *Mimosa fragrans*, *Arenaria Benthani*, *Galium Texense*, *Acalypha Lindheimeri*, *Erysimum asperum*, and *Hedeoma acinoides*; in clefts of the rocks the two ferns *Notholæna dealbata* and *Cheilanthes lanuginosa*.

April 25th we reached Lamosas, a town celebrated for its beautiful sulphur springs, which attract many people. Near this place I noticed for the first time *Thamnosma Texanum*, *Astragalus Wrightii*, and *Menodora heterophylla*.

At Lamosas we took the San Saba road, due west through a



prairie country dotted here and there by high rounded hills. On the next day, after crossing through a deep gap between two picturesque bluffs, crowned with shrubbery, we left the cretaceous formation for the red carboniferous sandstone. Instead of good grazing prairies there was poor, gravelly, rocky or sandy soils, all hoary with *chapperals* or thickets. These thickets are mostly formed by the following shrubs: *Prosopis juliflora*, *Diospyros Texana*, *Colubrina Texensis*, *Lippia lycioides*, and *Opuntia leptocaulis*. Among other plants I note *Astragalus Lindheimeri*, *Cooperia pedunculata*, *Cereus paucispinus*, *Cassia pumilis*, and *Argythamnia ophioides*. In nearing the Colorado the country is more regularly sandy, and we found *Senecio ampullaceus* and *Festuca sciurea* in abundance.

We crossed the Colorado the 27th. It is a deep stream, bordered on both sides by precipitous bluffs, on which I found *Cheilanthes tomentosa* and *Alabamensis*, and also for the first time the beautiful *Pellaea flexuosa*.

After traveling two or three miles west of the Colorado, over a red sandstone country, we found ourselves again in a hard limestone region. Here the rains overtook us again, and we were compelled to pay a little more attention to the botany of that place. Here the little prairies were dotted with the very beautiful *Phlox Roemeriana*; the streams were bordered with *Mimulus Jamesii*, var. *Texensis*; while on the rocky bluffs I noticed *Selaginella rupestris* and *Rhus virens*.

On the 30th, the journey was resumed in spite of threatening weather. We descended the San Saba valley, full of mesquit (*Prosopis juliflora*), where I found a plant most abundant on the plains of western Texas. It is an *Apium* proper, but not the same plant that was collected by me and distributed by Mr. Curtiss. This one must have another name, as the plant found on the plains is certainly the one collected by Capt. Pope.

In a branch of San Saba river, I noticed some *Schollera graminea* in bloom. At San Saba we took the Llano road south, and soon afterward pitched our tent in a small valley that would have been a fine place for any one to stop, but to me it looked like a botanist's paradise. There was a long hill all capped with perpendicular rocks, where were found *Tinantia anomala*, *Specularia Lindheimeri*, *Bouchetia erecta*, *Abutilon Wrightii*, *Gonolobus reticulatus*, and a good many more that I have already mentioned. Beyond this valley lay a country all intermixed with sands or rocky hills, and very disagreeable to travel over. In the valleys the principal trees are mesquit and post oaks; on the hills, mountain cedars and *Quercus Durandi*. We finally camped



on Cherokee creek, in a better looking country. The creek was full of *Nuphar advena*, and the banks were lined with *Carex comosa*, and a remarkable variety of *Carex acuta*.

The 2d of May we reached the granite region of Llano. It first appears as a few granite boulders cropping out among the post oaks, and along with them we noticed the following plants: *Tephrosia Lindheimeri*, *Sida Lindheimeri*, and a small plum tree (*Prunus glandulosa*) covered with fuzzy, unripe fruits, looking very much like small peaches. The people said they were "awful" good when ripe.

The Babyhead mountains were soon in view, a dark mass of nearly naked granites. I was disappointed in finding but two plants I had not seen before, *Pellaea Wrightiana* and a *Selaginella* that our best authorities have considered only a form of *rupestris*. In spite of that honorable opinion I am very much inclined to think it a different species. Beyond those hills, in a sandy valley, we collected *Vesicaria grandiflora*, *Hymenatherum Wrightii*, and an *Indigofera* considered by some to be *leptosepala*, but quite different in appearance.

At the town of Llano, after we had crossed the river of that name, we turned our faces toward the setting sun, going up the Llano valley. There in the sandy forests were found *Dalea nana* and *lasiathera*, *Paronychia setacea*, *Eritrichium Texanum*, *Vesicaria argyrea*, and *Houstonia humifusa*.

On the 4th, being along the Llano, we stopped on account of numerous species calling my attention. In the scanty soil among the rocks that border the tumultuous Llano were discovered *Boerhaavia tenuifolia*, *Nicotiana repanda*, *Gilia incisa* and *acerosa*, *Bouteloua Burkei*, and a shrubby *Croton* not yet named. In the river *Herpestis chamædryoides* was found.

The next day, after crossing a very poor country, a perfect desert, where *Plantago Patagonica* was about the only thing growing, with here and there a tuft of *Hermania Texana* not yet in bloom, we pitched our tent at the very foot of House mountains, a mass of bold, denuded rocks, quite high for Texas, where there are no true mountains this side of the Pecos. This proved to be a very interesting locality for a botanist, and for a tourist it is certainly so. And now I am sorry we did not stay there a week instead of three days. During that time I had my hands more than full. The ferns were *Woodsia obtusa*, *Notholæna Hookeri*, *Pellaea flexuosa* (with immense fronds) and *Wrightiana*, *Cheilanthes Lindheimeri*, and a variety of *tomentosa* near *Eatoni*.